

New Jersey Department of Transportation  
Bureau of Research  
**RESEARCH PROJECT**  
**Request for Proposals**  
**2012 Program**

**Date of RFP**  
**11/02/11**

**Closing Date**  
**12/15/11**

**Highway Repair Consolidation Feasibility**  
**Project No. 2012-08**

(Proposals must be prepared in accordance with NJDOT's *Information and Instructions for Preparing Proposals*. Please visit:

<http://www.state.nj.us/transportation/refdata/research/pdf/techpropresproj.pdf>

*Revised Proposal Evaluation Forms are available for your information on the website.)*

Proposals will be based on the merit of the information contained in the proposal. Budgets will be evaluated separately. Please place three (3) copies of the budget for this project in a separate sealed envelope.

**1. RESEARCH PROBLEM STATEMENT, BACKGROUND AND OBJECTIVES**

Recently Caltrans closed a section of a highway for significant amount of time (one week or longer) and, using feedback from various stakeholders, were able to incorporate multiple facets of highway repair and fixed most of the highway repair issues instead of just one or two. Caltrans has been coordinating deployment of shorter duration (short-term) projects with projects that require significant durations of lane closures and temporary traffic control. This coordination streamlines construction schedules and traffic operations. This study would determine the feasibility of the New Jersey Department of Transportation implementing similar measures in New Jersey.

The main objective of this study is to understand the types of projects that can be coordinated - in terms of construction compatibility, design completion and construction schedules. A secondary objective would be to evaluate the effectiveness of coordinating short- and long-term projects using a cost-benefit analysis tool to measure the efficiency of various combinations of projects relative to each other and the status quo (keeping the projects separate). This B/C analysis tool will incorporate the travel time savings of coordinating construction vs. a travel time delay of setting and clearing TWZs multiple times for each construction effort.

The project proposal is from a Traffic Operations perspective. The types of quantifiable benefits should be focused on in the cost-benefit analysis tool would include, among other variables, cost savings related to temporary work zone (TWZ) traffic control set-up and clearing, safety (lower probability of crashes with one vs. multiple work zones as a function of a time series), enhanced Quality Control for the project, and less travel delays.

This project is categorized as a Congestion Mitigation/Mobility Investment Strategy because by combining/coordinating multiple projects, there would be less temporary work zones (TWZ) needed, the projects could be deployed quicker, and the project schedule projections could be more reliable.

**2. TASKS**

[Provide a listing of appropriate general tasks divided into phases based on types of work (e.g., laboratory, field) or by year (e.g., year 1, year 2) or other appropriate milestones]

*The NJDOT is seeking the insight of proposal responders on how best to achieve the research objectives. Proposers are expected to describe a research effort that can realistically be accomplished as expeditiously as possible. Proposals must present the proposers' current thinking in sufficient detail to demonstrate their understanding of the problem and the soundness of their approach for conducting the required research.*

## **PHASE I – Literature Search**

Conduct a literature search of the current state of the practice.

After the award of the project, a more comprehensive literature search should be conducted. At the completion of this literature search, the Principal Investigator (PI) will make a presentation to the Research Project Selection and Implementation Panel to discuss their findings and to discuss the appropriate research approach.

## **PHASE II – Research Approach and Anticipated Results**

Clear description of how you will solve the problem and implement anticipated findings. Work may be divided into phases (e.g., Laboratory, Field or Year 1, Year 2) as necessary to clarify tasks. *Exit Criteria* must be developed during this phase.

### **3. IMPLEMENTATION AND TRAINING PLAN**

The Principal Investigator (PI) must meet with the Research Project Selection and Implementation Panel (RPSIP) and other NJDOT units to present the findings and as appropriate train these personnel in the use the project results. The Principal Investigator (PI) will develop an implementation plan as per the guidelines provided by NJDOT Research Bureau.

### **4. DELIVERABLES:**

The primary deliverable will be a software model that will calculate the cost effectiveness of various short- and long-term project combinations in order to pick the combination that reaps the most efficient net benefit. **This model would preferably utilize Microsoft Excel and/or Access, be provided on 10 DVD disks/flash drive/Seagate and would be the intellectual property of NJDOT to operate, maintain and upgrade internally. Model training of NJDOT staff, installation on NJDOT computers, and written instructions on training, installation and upgrading the model would also be included.**

The model would include, but not be limited to:

- List of the various types of projects put forth at NJDOT,
- Measurements, using a cost benefit analysis, of the cost efficiency of various combinations of projects relative to each other and the status quo (keeping the projects separate),
- List of NJDOT unit function descriptions and contacts to coordinate with for the various types of projects,
- Flowcharts of the most current work order processes derived from a summary of two (2) group interviews with the various NJDOT units,
- Algorithm which calculates the total quantifiable savings, from coordinating more than one project, derived by utilizing a single Temporary Work Zone / Traffic Control duration, lower incidents of crashes, enhanced project Quality Control and less travel delays.

Other minimum deliverables necessary to complete this Research Project include, but are not limited to:

- Presentation of Summary of Literature Search Results
- Discussion to Support and Refine the Project Tasks
- Project work plan.
- Technical Memorandum on the survey results
- Technical memorandum on the measures that are working or not working
- Technical memorandum on actions taken
- Interim Status reports suitable for Senior Leadership if required

- Quarterly Reports and Final report with appropriate tables, graphs and charts in hard copy version, PDF file format, Word, and on CD ROM. Two copies plus one per RSIP member of each presentation, technical memorandum, draft final report, and Final Report (10 copies). The draft Final Report Package, in accordance with the latest version of the “Guidelines for Preparing NJDOT Research Final Reports and Tech Briefs” is due to the customers and Research Project Manager (RPM) four (4) months before the end date of the project contract to allow time for review by the Research Project Selection and Implementation Panel. Final Acceptance will be granted upon receipt of all final deliverables including those listed above as well as ten copies of the approved final report and tech brief.

## 5. CONTRACT TIME:

Contract time, from Notice to Proceed to acceptance of the Final Report Package, should be no more than thirty (30) months maximum, including the submission of the draft final report package four (4) months prior to the end of contract date.

The Principal Investigator (PI) must provide the anticipated research study duration based on the proposed tasks. Consideration should be given to potential impediments so that adjustments are incorporated into the schedule minimizing the need for time extensions. No-cost time extensions require extraordinary circumstances for approval and should not be considered in negotiating the final project time line.

## 6. CONTACTS:

Upon request, and subject to staff availability, a meeting may be scheduled with interested parties after the RFP's are distributed to refine the objectives and deliverables and to promote a better understanding of the research needs. Questions on this topic **shall not** be directed to any Research Project Manager, Research Customer, or any other NJDOT person. All questions and answers may be addressed during this meeting (if conducted) or through e-mail. Visit the Bureau of Research website for information about the Bureau of Research. Contact Camille Crichton-Sumners before November 14, 2011 ([Camille.CrichtonSumners@dot.state.nj.us](mailto:Camille.CrichtonSumners@dot.state.nj.us)) with RFP related questions or to express your interest in requesting or participating in a pre-proposal meeting.

## 7. DEADLINE

<p><b>Proposals (10 single-bound copies) are due at the NJDOT Bureau of Research</b> <b>No later than 4:00 PM 12/15/11</b></p>
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**Authorization to Begin Work:** To be negotiated.

## 8. DELIVERY INSTRUCTIONS:

**For private, paid messenger services such as Federal Express, DHL, UPS, etc., or for hand-carried deliveries:**

2012 PROPOSAL-NJDOT  
New Jersey Department of Transportation  
Bureau of Research  
1035 Parkway Avenue  
Trenton, New Jersey 08625-0600

**For U.S. Postal Service mail:**

New Jersey Department of Transportation  
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